REMARKS

Fig. 1 of the drawings has been corrected in red, and the proposed corrections are submitted to the PTO under a separate transmittal letter entitled "Submission of Proposed Drawing Amendment For Approval by Examiner (37 C.F.R. § 1.123)." It is believed that no new matter has been added to the drawings and that the proposed drawing corrections are supported by the specification.

Claim 12 has been amended to make it clear that it is a <u>stepped amplitude</u> signal which is applied to the antenna and not a frequency signal. A stepped amplitude may be regarded as the antithesis of a discrete frequency signal as its (stepped amplitude signal) effect in the frequency domain is to produce <u>essentially an unlimited spectrum of frequencies, not a frequency</u>. In addition to this difference, and with respect to Kuo, it is to be noted that Kuo is employed to illustrate the point that a log periodic antenna has a plurality of dipoles having triangular-shaped elements of different lengths. Such a plurality is employed to compositely cover a wide bandwidth, each dipole of a particular length covering a portion of the spectrum. The problem with this type of antenna is that if it were excited by a stepped wave, as claimed, each dipole of the antenna would be fed at a different relative time (as shown), and the different bands of frequencies are transmitted at different times and thus there occurs a frequency dispersion (with time) which effects a signal distortion of such signals when received, and this in turn results in loss of detail of received (radar) signals,

substantially reducing the capability of target identification. Clearly there is no suggestion for use of such an antenna in a non-sinusoidal system as employed by the applicant and as claimed. Further, claim 12 is amended to specify that each dipole of the antenna is substantially of identical length which is, of course, quite inconsistent with a log periodic antenna.

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non-sinusoidal system as employed by the applicant and as claimed. Further, claim 12 is amended to specify that each dipole of the antenna is substantially of identical length which is, of course, quite inconsistent with a log periodic antenna.

Claim 15 was previously rejected in the parent case. Claim 15 calls for distinct receiving means differing from that described by Nysen et al. Thus, in claim 15, the receiving means is defined as employing coherent detection. In Nysen et al., the received signal comprises a series of different frequencies; and when received by an interrogated craft, and in signal transformer 22, the discretely different frequencies are discretely delayed and a version of each of the series retransmitted back to the transmitting station. Clearly, there is no coherent detection as the interrogated craft has no information as to the time of transmission as required by claim 15. The summation provided by bus bar 60 and 62 of Nysen et al. is not with respect to a plurality of coherent detected signals as these bus bars sum deliberately <u>time varied</u> received signals for a time varied configuration of received signals. Clearly, this differs from the integration called for by claim 15.

As to the character of propagation contemplated by claim 15, it is contemplated to be electromagnetic or sonic.

Claim 17 specifies that the medium (of claim 15) is liquid, and in such a medium, propagation could be via either electromagnetic radiation or sonic, particularly if the liquid was a low conductivity type liquid. In the case of salt water, of course, it is contemplated that propagation be only sonic. It

is believed allowable for the reasons set forth above with respect to claim 15.

Claim 18, which is dependent upon claim 16, is in turn dependent upon claim 15. Propagation could be either via electromagnetic or sonic where the liquid is of low conductivity; otherwise, it needs to be sonic.

With respect to claims 21 and 22, Maher Patent No. 4,128,299, previously cited, discloses various systems for modulating light passing through an optical wave guide including the application of an electrical field across the optical wave guide wherein there is produced a variation in the index of refraction from the application of the field. It is significant that this produces amplitude modulation. In applicant's system, there are, in effect, combined optical and non-optical wave guides, the latter being imposed across the former. This is manifest in that the structure is elongated. Thus, it is long with respect to its thickness, e.g., a thickness of 2 mm and a length of 1 meter, or 1,000 mm. Further, as described in the specification and claims, the presence of the electrical (as opposed to optical) outer wave guide is emphasized by the feature of applying a modulating signal to one end of the wave guide structure, in this case, the optical exiting end. This feature is not taught or suggested by Maher. The significance of this is that the configuration enables frequency, as opposed to amplitude, modulation, a function not disclosed by Maher. Such occurs by virtue of the traveling wave transversing the outer wave guide from its exit end to its entrance end.

Claims 23 and 24 (allowed in the parent case) have been added to more particularly define the antenna of claims 12 and 15.

Added claim 25 contains the limitations of claims 29 (as allowed in the parent case). It is to be noted that while it is true that the input of grid circuit of a thyratron includes electrical resistance, this is in the input of a switching means, whereas as now provided in claim 25, the resistance is between the switching means and the antenna. Thus, differing from that illustrated by the Cook reference (J.C. Cook, Monocycle Radar Pulses As Environmental Probes, NASA Scientific and Technical Information Facility, August 1965; PUP No. N6880367, pages 22--31). In the case of Pender et al. (Electrical Engineer's Handbook, "Thyratron and Grid Control Circuits", pps. 16-08 - 16-12; John Wylie and Sons, New York; 1936), the resistance, being in the input of the thyratron, is clearly not between the switching means and whatever output circuit to which it is connected. None of the Pender et al. circuits illustrate a resistor connected between the load and the thyratron.

Added claims 26-28 are dependent upon claim 25 and are believed allowable, as was claim 29 in the parent case.

Added claims 29-33 correspond to allowed claims 30-34 in the parent case.

Added claim 34 provides for a monocyclic transmitter which transmits at a changing rate and responsive to selected electrical volages, a combination not taught by the prior art. This claim (claim 35 in the parent case) originally lacked the

article "one" and was originally rejected on this basis. In addition, the original claim has been elaborated on to make clear the basic operating mode of the invention with the effect that antenna operates to transmit responsive to electrical voltage.

Added claims 35-38 (claims 36-39 in the parent case) are dependent on claim 34, and as such are deemed allowable based upon the addition of the missing article.

Applicant encloses a check for $268.00 for the additional filing fee for the claims added herein, said check being attached to PTO Form 3.52.

Respectfully submitted,

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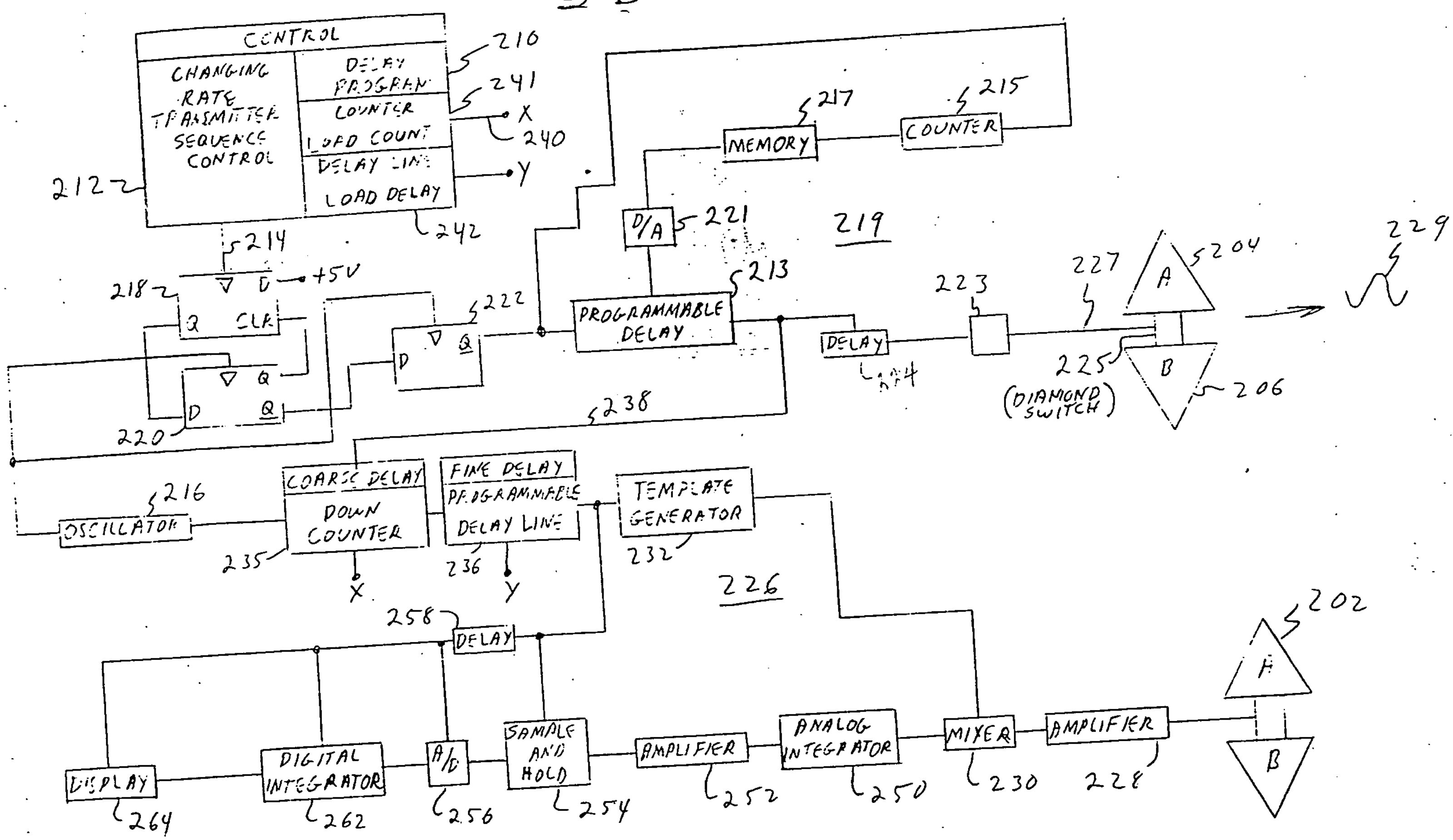

CONTROL
CHANGING RATE TRANSMITTER SEQUENCE CONTROL
DELAY PROGRAM
COUNTER
LOAD COUNT
DELAY LINE
LOAD DELAY
+5V
CLK
MEMORY
COUNTER
D/A
PROGRAMMABLE DELAY
DELAY
(DIAMOND SWITCH)
COARSE DELAY
DOWN COUNTER
FINE DELAY
PROGRAMMABLE DELAY LINE
TEMPLATE GENERATOR
OSCILLATOR
DELAY
SAMPLE AND HOLD
AMPLIFIER
ANALOG INTEGRATOR
MIXER
AMPLIFIER
DISPLAY
DIGITAL INTEGRATOR
A/D
A
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FIG. 1